

U.S. Antarctic Marine Living Resources Program

2011-2012 Weekly Field Reports

Cape Shirreff, Livingston Island

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Science Report

Seabirds

1. Fifty-six percent of the gentoo penguin reproductive study nests have hatched, 6% of nests have eggs, and 38% of the nests have failed.
2. Sixty-two percent of the chinstrap reproductive study nests have hatched and the remaining 38% of the nests in the study have failed.
3. Eight percent of nests in the known-aged gentoo penguin reproductive study are still incubating eggs, 54% of nests have hatched eggs, and 38% of nests have failed. Forty-three percent of the known-aged chinstraps have completed hatching and the remaining 57% of known-age chinstrap nests have failed.
4. Eighteen brown skua pairs are attending territories on Cape Shirreff. Eight pairs are incubating eggs, three of which were relays after a failed initial attempt. Four nests have failed and the eggs from the remaining 6 nests have hatched.
5. This last week has been very busy. We deployed radio transmitters on 19 gentoo penguins between 2 January and 3 January. We then deployed radio transmitters on 20 chinstraps on 4 January. These transmitters are used to measure foraging trip durations during the chick-provisioning period.
6. We began weighing gentoo chicks of all reproductive study and known-aged breeder nests on 6 January. The mass, taken when chicks are 21 days old, is used as a measure of chick condition before they crèche.
7. We deployed 4 satellite transmitters and 3 time-depth recorders (TDRs) on gentoo penguins that are brooding chicks on 8 December. The satellite transmitters will be used to determine where the penguins forage and the time-depth recorders give profiles of diving behavior. We will recover these instruments after one week of deployment.
8. We began diet sampling on chinstraps and gentoos this week. We follow adults returning from foraging trips back to their nests to verify that they are breeders and capture them before they feed their chicks. Samples are collected using the wet-offloading technique and data on total mass of stomach contents, the composition of diet items, and information on Antarctic krill lengths and sexes are recorded.



9. A visiting juvenile macaroni penguin was observed in the colonies twice this week, first on 6 January and again on 8 January.

Pinnipeds

10. Our six GPS/Time depth recorder females for monitoring foraging range and behavior continue to collect data. We have collected data on 21 foraging trips. All have completed at least three trips to sea, one has completed four trips and another one has completed five and is currently on her sixth trip to sea. Mean trip duration for these instrumented females is 3.97 days (s.d.=1.61).
11. Only eight of our 30 CCAMLR attendance females have completed six trips to sea. However, only two attendance females lost their pups, only one of those lost her pup before completing six trips.
12. Mean trip duration is longer than last year. All 30 attendance study females has completed at least two trips to sea, only one has not completed at least three trips. Trip durations are as follows: first trip: 3.20d (s.d.=2.09, n=30), second trip 3.99d (s.d.=2.19, n=30), third trip 4.30 d (s.d.=1.85, n=29), and fourth trip 3.92d (s.d.=1.21, n=19). The maximum trip duration has been 9.56 days.
13. Seven of the pups of the eight females that have completed six trips to sea have been weighed according to protocol.
14. We also took our first sample of CCAMLR pup weights on 5 January (30 days after the median date of pupping). Mean mass of male pups was 2.6 kg less than for the same sample last year and females were on average 1.0 kg lighter. We will continue to collect weights on a sample of 100 pups every two weeks until late February.
15. We continue to monitor our adult tagged female population and mother pup pairs to get a measure of reproductive success and loss of pups due to leopard seal predation. Pups have begun entering the water and spend considerable amounts of time now playing in shallow water making them easily accessible to leopard seals.
16. We captured thirteen fur seals this week for retrieval of archival instruments and deployment of over winter geolocation light sensors (GLS). We have now retrieved 15 of the 16 females that returned after carrying GLS instruments over winter. We have thus far deployed 27 of the planned 60 GLS fur seal over winter instruments for 2012.



17. Fur seal diet protocol requires collecting 10 scats each week for analysis of fish bones, squid beaks, and krill carapaces. This week we collected our third sample. To date 30 scats have been collected. Twenty percent of the scats collected this were predominantly fish. Last year we recorded no fish in fur seal diet in the first three samples.
18. On 6 January we completed our seventh weekly Cape-wide Phocid census. We counted 190 southern elephant seals, 19 Weddell seals, 12 leopard seals and one crabeater seal.
19. Leopard seals continue to arrive and as of 7 January we have recorded 80 sightings of 18 tagged seals. Ten of the 18 returned from previous years and the other eight we have tagged this year.

Weather

20. Yesterday on the Cape was clear and sunny. It was our first full day of sun since Thanksgiving. Winds died in the evening and seas were exceptionally calm. Overall for the week, the winds averaged 12.5 mph with a maximum wind speed of 43 mph. Westerlies dominated all week. Precipitation for the week was 0.15 inches bringing the season total to 2.1 inches. The average temperature was 1.8° C with a high of 5.2° C and a low of -0.2° C. Sunrise is now at 3:23am and sunset is at 10:44pm.

Camp

21. Yesterday we had a Chilean naval ship visit the Cape to drop off three Chileans that will be working on camp improvements of the Chilean camp. They arrived around 23:30 and departed at 01:30. Around 18 January they are anticipating arrival of two Chilean scientist to join their team.
22. We got out our ATV to assist the Chileans in opening their camp and transporting their cargo from the landing beach to their camp.
23. The past two nights we had enough broken cloud cover to enjoy a nearly full moon over the Cape.



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